Chapter 9
Opportunities and Challenges of Mobile Technologies in Higher Education Pedagogy in Africa: A Case Study

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ABSTRACT
Since the late 1990s, Kenya has undergone a real technological revolution, especially in the domain of mobile telephony and Internet connectivity. From a negligible number of handsets in the hands of the political elites, today almost every adult Kenyan has a mobile phone, or access to one. This is thanks to reduced costs following expansion and diversification of the market niche. Despite this remarkable progress, research has shown that cell phones are used mainly for financial transactions, social communication, and entertainment, but hardly for learning purposes. This means that despite the impressive number of smartphone owners in the university, for example, the devices are not used for enhancing student learning or teaching. In Kenya, more than 60% of the population employs mobile banking, thus underscoring the immense potential that the cell phones have for education. This chapter explores the benefits and challenges in employing mobile telephony to improve the quality of teaching and learning.

Mobile phones are the future of the Internet –Google Vice-President (2007)

INTRODUCTION
Cell phones have revolutionized communication and businesses in Africa in the last 15 years or so. In Kenya, for instance, mobile telephony has significantly impacted small-scale businesses whose owners could hardly afford banking fees. Indeed, about 60% of Kenyans employ mobile phones to access banking and financial services. Among the most successful money transfer services include M-Pesa, M-Shwari and M-Banking. Further, due to the dramatic reduction of prices, mobile phones have simply become ubiquitous. On average, a basic cell phone costs USD 24 in Kenya. Cell phones are now increasingly improving rural health in...
some countries, notably India and Nigeria (Egbunike 2013). In Kenya, mobile applications are beginning to improve farming, especially livestock management, hence, improving incomes. In the same vein, mobile phones are used in the slums of Kibera in Nairobi to make medical prescriptions, thus enhancing health at an affordable cost to the financially challenged populations\(^2\). Nevertheless, there is hardly any evidence of using cell phones to enhance academic achievement in Kenya. In a recent survey in Kenyan public universities, it was noted that faculty and students hardly use Web 2.0 technologies for learning (Murungi & Gitonga 2013). These technologies include wikis, blogs, social networking, folksonomies, podcasting, Wikipedia, YouTube, Facebook, MySpace, Flickr\(^3\). Researches are ongoing on the efficacy of cell phones to improve language learning (Susan 2008, Fangyi 2011). Given the ubiquity and capabilities of cell phones, it would be of interest to examine whether students can engage more with the learning materials, fellow students and their lecturers (Maria & Muyinda 2013). Cell phones, especially smart phones, provide learning opportunities such as SMS, videos and applications. In the current study, university students enrolled in a French literature course were encouraged to employ SMS messages to comment on posted thematic questions and also their reading materials, mainly French novels. The purpose was to establish whether cell phones could improve students’ performance in French literature.

**LITERATURE REVIEW**

In 2013, an E-learning conference was held in Nairobi, Kenya, and among the highlights was M-learning. Nonetheless, the M-learning sessions went little more than stating that mobile phones had great potential for improving learning. There was no evidence of usage of cell phones for learning and yet these communication tools are ubiquitous due to increased affordability and popularity, especially among teenagers and university students. It is estimated that 75% of teenagers intend to use cell phones for the rest of their lives (CTIA and Harris Interactive survey cited in Montgomery 2010)\(^4\). This implies that most of these young people will be having a cell phone at hand for the better part of their lives. The World Bank has been collaborating with mEducation Alliance (previously known as m4Ed4Dev)\(^5\) to explore the potential of mobile education in enhancing progress in the developing countries in view of the ubiquity of mobile phones. The Alliance seeks to establish how mobile phones can improve education and spur development in the developing world. To be sure, there are groups of youths in Ghana, Morocco, Uganda and Maharashtra creating mobile phone networks to enhance e-learning\(^6\). In an iHub debate entitled *How can mobile devices enhance learning in classrooms,* the experts were unequivocal about how mobile phones can be used to enhance assessment, access learning content and build networks for learning, especially in the developing world\(^7\). The E-learning Africa conference in 2011 noted that there were more than 500 million cell phone subscribers in Africa, up from 246 million in 2008\(^8\). Clearly, there are more cell phones in Africa than in the US. Cell phones, especially SMS have promoted distance learning in areas remote of access, devoid of electricity or Internet, notably in Mozambique. Indeed, Gerald Henzinger in a paper entitled “New Technologies in Restricted Environment”, salutes the significant contribution of cell phones in Mozambique in promoting access to content for many students, interaction with faculty about the subject matter and on administrative issues. The inexpensive technology of SMS can be employed to promote education and contribute to the development of a country (Attewell, 2005). By facilitating access to education, cell phones are promoting equity and equality. In fact, students from impoverished rural homes can enjoy the same quantity and quality of education as anyone else. Further, the conviviality of mobile technologies
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